06-28-05 PTO/SB/21 (09-04) The December 2015 (09-04) Approved for use through 07/31/2006. OMB 0651-0031 U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE JUN 2 7 2005 der the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number Application Number 10/615,810 TRANSMITTAL Filing Date July 8, 2003 **FORM** First Named Inventor John Dankwardt Art Unit 1755 **Examiner Name** Brown, Jennine M. (to be used for all correspondence after initial filing) Total Number of Pages in This Submission Attorney Docket Number 021153-001900 US ENCLOSURES (check all that apply) Fee Transmittal Form Drawing(s) After Allowance Communication to TC Appeal Communication to Board Fee Attached Licensing-related Papers of Appeals and Interferences Petition Appeal Communication to TC Amendment / Reply (Appeal Notice, Brief, Reply Brief) Petition to Convert to a After Final Proprietary Information Provisional Application Power of Attorney, Revocation Affidavits/declaration(s) Change of Correspondence Address Status Letter Terminal Disclaimer Other Enclosure(s) Extension of Time Request (please identify below): **Express Mail Certificate** Request for Refund Express Abandonment Request Fee Transmittal Form; CD, Number of CD(s) **IDS Statement:** PTO/SB/08a; and Landscape Table on CD Return Postcard Certified Copy of Priority Remarks Document(s) Reply to Missing Parts/ Incomplete Application Reply to Missing Parts under 37 CFR1.52 or 1.53 SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT Firm Signature

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Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).		Complete if Kno	own
	Application Number	10/615,810	
FEE TRANSMITTAL	Filing Date	July 8, 2003	
for FY 2005	First Named Inventor	John Dankwardt	
pplicant claims small entity status. See 37 CFR 1.27	Examiner Name	Brown, Jennine M.	
OTAL AMOUNT OF PAYMENT (\$) 180.00	Art Unit	1755	·
TOTAL AMOUNT OF PAYMENT (\$) 180.00	Attorney Docket No.	021153-001900 US	
METHOD OF PAYMENT (check all that apply)			
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Signature Semil B. Coffins	(Attorney/Agent)	52,180	Telephone 159

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## THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant

John Dankwardt et al.

Ser. No.

10/615,810 July 8, 2003

Filing Date For

Nickel Catalyzed Cross-Coupling Reactions Between

Organomagnesium Compounds and Anisole Derivatives

Examiner

Brown, Jennine M.

Art Unit

1755

Atty. Docket:

021153-001900 US

Mail Stop: AMENDMENT Commissioner for Patents

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## **INFORMATION DISCLOSURE STATEMENT**

Sir:

Pursuant to 37 C.F.R. § 1.56, the attention of the Patent and Trademark Office is hereby directed to the references listed on the attached PTO/SB/08a. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the references be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

#### I. COPIES

- 1. This application was filed <u>before</u> June 30, 2003. Accordingly, submitted herewith is a legible copy of (i) each U.S. and foreign patent; (ii) each publication or that portion which caused it to be listed; and (iii) all other information or that portion which caused it to be listed.
- Z. This application was filed on or after June 30, 2003. Accordingly, copies of cited U.S. patents and patent applications are not included. Copies of foreign patent documents and non-patent literature are included.

#### II. CONCISE EXPLANATION OF RELEVANCE

- DOCUMENTS IN THE ENGLISH LANGUAGE
  The patents, publications, or other information listed on the attached PTO/SB/08a are in the English language and do not require a statement of relevancy.
- ☑ 2. DOCUMENTS NOT IN THE ENGLISH LANGUAGE

			a. CONCISE EXPLANATION  A concise explanation of the relevance of all patents, publications, or other information listed that is not in the English language is as follows:
			b. ENGLISH LANGUAGE SEARCH REPORT An English language version of the search report or action that indicates the degree of relevance found by the foreign office is attached, thereby satisfying the requirement for a concise explanation. MPEP 609(III)(A)(3).
		$\boxtimes$	c. OTHER The following additional information is provided for the Examiner's consideration. English language abstract English language equivalent application
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IV.

Respectfully submitted,

Date: <u>Jane 24, 20</u>05

Samuel B. Rollins Registration No. 52,180

TransTech Pharma, Inc. 4170 Mendenhall Oaks Pkwy Suite 110 High Point, NC 27265 Phone: (336) 841-0300

Fax: (336) 841-030

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Application Number 10/615,810

Filing Date July 8, 2003

First Named Inventor John Dankwardt

Art Unit 1755

Examiner Name Brown, Jennine M.

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Attorney Docket Number 021153-001900 US

			U.S. PATENT	OCUMENTS	· · · · · · · · · · · · · · · · · · ·
Examiner Initials *	Cite No.1	Document Number  Number - Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	PC-001	US- 4,263,466	04/21/1981	Colon et al.	3
	PC-002	US- 4,412,856	11/01/1983	Brunner et al.	
	PC-003	US- 4,508,560	04/02/1985	Brunner et al.	
	PC-004	US- 4,620,025	10/28/1996	Sletzinger et al.	
	PC-005	US- 4,724,260	02/09/1988	Kirchhoff et al.	
	PC-006	US- 4,730,032	03/08/1988	Rossi et al.	
	PC-007	US- 4,912,276	03/27/1990	Puckette	
	PC-008	US- 4,916,227	04/10/1990	Puckette	
	PC-009	US- 4,990,647	02/05/1991	Himmler et al.	
	PC-010	US- 5,084,204	01/28/1992	Reiffenrath et al.	
	PC-011	US- 5,128,355	07/07/1992	Carini et al.	
	PC-012	US-,5,130,439	07/14/1992	Lo et al.	
	PC-013	US- 5,202,349	04/13/1993	Zimmer et al.	
	PC-014	US- 5,237,116	08/17/1993	Corley et al.	
	PC-015	US- 5,264,456	11/23/1993	Chandrratna et al.	
	PC-016	US- 5,288,895	02/22/1994	Bouisett et al.	
	PC-017	US- 5,364,943	11/15/1994	Rosen et al.	
	PC-018	US- 5,559,144	09/24/1996	Brooks et al.	
	PC-019	US- 5,559,277	09/24/1996	Beller et al.	
	PC-021	US- 5,922,898	07/13/1999	Miller et al.	
	PC-022	US- 6,194,599	02/27/2001	Miller et al.	
	PC-023	US- 6,252,001	06/26/2001	Babb et al.	
	PC-024	US- 6,500,849	12/31/2002	Tegeler et al.	
	PC-025	US- 6,566,372	05/20/2003	Zhi et al.	
	PC-026	US 2003-0100760	05/29/2003	Miller	
	PC-090	US 2005-0137402	06/23/2005	Miller et al.	

		FOREIGN PA	TENT DOCUM	ENTS	·· <del>-</del> · ··	
Examiner		Foreign Patent Document		Name of Patentee or	Pages, Columns, Lines,	
Initials*	Cite No.1	Country Code <sup>3</sup> - Number <sup>4</sup> - Kind Code <sup>5</sup> ( <i>if known</i> )	Publication Date MM-DD-YYYY	Applicant of Cited Document	Where Relevant Passages or Relevant Figures Appear	τ⁵
	PC-027	EP 0 131 968	01/23/1985	Araya et al.		
	PC-028	EP 0 470 795	02/12/1992	Roberts et al.		
	PC-029	EP 0 470 794	02/12/1992	Roberts et al.		

Examiner Signature	Date Considered	

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Application Number	10/615,810
Filing Date	July 8, 2003
First Named Inventor	John Dankwardt
Art Unit	1755
Examiner Name	Brown, Jennine M.
Attorney Docket Number	021153-001900 US

		NON PATENT LITERATURE DOCUMENTS	
Examiner Initials *	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T²
	PC-031	ALI et al., "Palladium-Catalysed Cross-Coupling Reactions of Arylboronic Acids with .PIDeficient Heteroaryl Chlorides", Tetrahedron, vol. 48, pp. 8117-8126, (1992)	
	PC-032	BELETSKAYA, et al., "The nickel-catalyzed Sonogashira-Hagihara reaction", Tetrahedron Letters, vol. 44, pp. 5011-5013, (2003)	
	PC-033	BLEICHER AND COSFORD, "Aryl- and Heteroaryl-alkyne coupling reactions catalyzed by palladium on carbon and Cull in an aqueous medium," SYNLETT, 11:1115-1116, (1995)	
	PC-034	BRINGMANN et al., "The Directed Synthesis of Biaryl Compounds: Modern Concepts and Strategies", Angew. Chem, Int. Ed. Engl., vol. 29, 977-991, (1990)	
	PC-035	CARINI et al., "Nonpeptide Angiotensin II Receptor Antagonists: The Discovery of a Series of N-(Bipheynylymethyl)imidazoles as Potent, Orally Active Antihypertensives", J. Med, Chem., vol. 34, pp. 2525-2547, (1991)	
	PC-036	CIBULKA et al., "Metal Ion Chelates of Lipoophilic Alkyl Diazinyl Ketoximes as Hydrolytic Catalysts", Collect. Czech. Chem. Commun., vol. 64, pp. 1159-1179, (1999)	
	PC-037	CLOUGH et al., "Coupling of Nonequivalent Aromatic Rings by Soluble Nickel Catalysts. A General Route to the 1,8- Diarylnaphthalenes.sub.1a", J. Org. Chem., vol. 41, pp. 2252-2255, (1976)	
	PC-038	COLON et al., "Coupling of Aryl Chlorides by Nickel and Reducing Metals", J. Org. Chem., vol. 51, pp. 2627-2637 (1986) .	
	PC-039	DIEK et al., "Palladium Catalyzed Synthesis of Aryl, Heterocyclic and Vinylic Acetylene Derivatives", Organometallic Chem., 93:529 (1975)	
	PC-040	FUSON, R.C. and W.S. FRIEDLANDER, *Displacement of substituents in phenyl 2,4,6,-triisoplylphenyl ketone by the action of Grignard reagents*, J. Am. Chem. Soc., vol. 75, pp. 5410-5411, (1953)	
	PC-041	FUSON, R.C. et al., "The reaction of Grignard reagents with the cyanobenzoyldurenes;", J. Org. Chem., vol. 16, pp. 648-654, (1951)	
	PC-042	GRUSHIN et al., "Transformations of Chloroarenes, Catalyzed by Transition-Metal Complexes", Chem. Rev., vol. 94, pp. 1047-1062, (1994)	
	PC-043	HOUSE et al., "Reactions of the 1,8-Dipenylanthracene System", J. Org. Chem., vol. 45, pp. 1807-1817 (1980).	
	PC-044	HOUSE et al., "Unsummetrically Substituted 1, 8-Diarlanthracenes", J. Org. Chem., vol. 51, pp. 921-929, (1986)	
· · · · · · · · · · · · · · · · · · ·	PC-045	KAGEYAMA et al., "Nickel-Catalyzed Cross-Coupling Reaction of Aryl Halides in Pyridine. A Practical Synthesis of 4- Methylbiphenyl-2-carbonitrile As a Key Intermediate of Angiotensine II Receptor Antagonists", Synlett, pp. 371-372, (1994)	
	PC-046	KALININ et al., "Carbon-Carbon Bond Formation in Heterocycles Using Ni- and Pd-Catalyzed Reactions", Synthesis, pp. 413-432, (1992)	
	PC-047	MANTLO et al., "Potent, Orally Active Imidazo 4,5-b pyridine-Based Angiotensin II Receptor Antagonists", J. Med. Chem., vol. 34, pp. 2919-2922 (1991)	
	PC-048	MILLER AND FARRELL, "Preparation of unsymmetrical Biaryls via Ni- or Pd-catalyzed coupling of aryl chlorides with arylzincs", Tett.Lett., vol. 39, pp. 6441-6444, (1998)	
	PC-049	MILLER AND FARRELL, "Synthesis of functionally substitutedunsymmetriczal Biaryls via a novel double metal catalyzed coupling reaction", Tetrahedron Letters, vol. 39, pp.7275-7278 (1998)	

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next

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Application Number	10/615,810			
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Art Unit	1755			
Examiner Name	Brown, Jennine M.			
Attorney Docket Number	021153-001900 US			

		NON PATENT LITERATURE DOCUMENTS	r
Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T²
	PC-050	MILLER et al., "Nickel Catalyzed Cross-Coupling and Animation Reactions of Aryl Nitriles", Synthesis, No. 11, pp. 1643-1648, (2003)	
.,	PC-051	MILLER et al., "Nickel catalyzed cross-coupling of modified alkyl and alkenyl Grignard reagents with aryl- and Heteroaryl nitriles: activation of the C-CN bond", Tetrahedron Letters, vol. 44, pp. 1907-1910, (2003)	
	PC-052	MILLER, "C-C Bond Activation with selective functionalization: preparation of unsymmetrical Biaryls for benzonitriles", Tetrahedron Letters, vol. 42, pp. 6991-6993, (2001)	
	PC-053	MILNER, D.J. et al., "The mono-alkyldecyanation of tetrafluoroterephtalonitrile by reaction with Gringard reagents," J. Organometallic Chem., vol. 302, pp. 147-152, (1986)	
	PC-054	MIYAURA et al, "The Palladium-Catalyzed Cross-Coupling Reaction of Phenylboronic Acid with Haloarenes in the Presence of Bases", Synthetic Communications, vol. 11, p. 513 (1981)	
	PC-055	NAKAO, et al., "Nickel-Catalyzed Arylcyanation of Alkynes", Journal American Chemical Society, (2004)	
	PC-056	NEGISHI et al., "Selective Carbon-Carbon Bond Formation via Transition Metal Catalysis. 3. A Highly Selective Synthesis of Unsymmetrical Biaryls and Diarylmethanes by the Nickel- or Palladium-Catalyzed Reaction of Aryl- and Benzylzine Derivatives with Aryl Halides", J. Org. Chem., vol. 42, pp. 1821-1823 (1977)	
	PC-057	PENNEY et al., "Alkynylation of benxonitriles via nickel catalyzed C-C bond activation", vol. 45, pp. 4989-4992, (2004)	
	PC-058	PERCEC et al., "Aryl Mesylates in Metal Catalyzed Homo- and Cross-Coupling Reactions. 4. Scope and Limitations of Aryl Mesylates in Nickel Catalyzed Cross-Coupling Reactions", J. Org. Chem., vol. 60, 6895-6903, (1995)	
	PC-60	ROSSI et al., "Palladium-Catalyzed Syntheses of Naturally-Occurring acetylenic Thiophens and Related Compounds", Tetrahedron, vol. 40, pp. 2773-2779, (1984)	
	PC-061	SAITO et al., "A Synthesis of Biaryls via Nickel (O)-Catalyzed Cross-Coupling Reaction of Chloroarenes with Phenylboronic Acids", Tetrahedron Letters, vol. 37, pp. 2993-2996, (1996)	
	PC-062	SANISBURY, "Modern Methods of Aryl-Aryl Bond Formation", Tetrahedron, vol. 36, p.p. 3327 to 3359, (1980)	

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance

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Complete if Known Application Number 10/615,810 Filing Date July 8, 2003 First Named Inventor John Dankwardt Art Unit 1755 Examiner Name Brown, Jennine M.

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Sheet of Attorney Docket Number 021153-001900 US

	<del>,</del>	NON PATENT LITERATURE DOCUMENTS	
Examiner Initials *	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	т
	PC-063	SILBILLE et al., "Electrochemical Conversion of Functionalised Aryl Chlorides and Bromides to Arylzinc Species", J. Chem. Soc. Chem. Comm., pp. 283-284 (1992)	
	PC-064	SONOGASHIRA, et al., "Development of Pd-Cu catalyzed cross-coupling of terminal acetylenes with sp <sup>2</sup> -carbon halides", Journal of Organo Metallic Chem., vol. 653, pp. 46-49, (2002)	
	PC-065	STANFORTH, S.P., "Catalytic cross-coupling reactions in Biaryl synthesis," Tetrahedron, vol. 54, pp. 263-303 (1998)	
	PC-066	TAMAO et al., "Nickel-Phosphine Complex-Catalyzed Grignard Coupling. I. Cross-Coupling of Alkyl, Aryl, and Alkenyl Grignard Reagents with Aryl and Alkenyl Halides: General Scope and Limitations", Bull. Chem. Soc. Japan, vol. 49, pp. 1958-1969, (1976)	
	PC-067	VOEGTLE et al., "Tweezer-shaped hydrocarbons", Chemical Abstracts, vol. 125, pp. 219-235 (1992)	
	PC-068	WENKERT, et al., "Transformation of Carbon-Oxygen into Carbon-Carbon Bonds Mediated by Low-Valent Nickel Species", Journal of Organic Chemistry, vol. 49, pp. 4894-4899, (1984)	
	PC-069	WENKERT, et al., "Nickel-Induced Conversion of Carbon-Oxygen into Carbon-Carbon Bonds, One-Step Transformations of Enol Ethers into Olefins and Aryl Ethers into Biaryls", vol. 101, pp. 2246-2247, (1979)	
	PC-070	WHITALL ET AL, "Organometallic Complexes for Nonlinear Optics. 3.1 Molecular Quadratic Hyperpolarizabilities of Ene-, Imine-, and Azo-Linked Buthenium, sigma, -Acetylides: Z-ray Crystal Structure of Ru (E) -4, 4' -C. tplbond.CC6H4CH: CHC6H4NO2: (PPh3) 2 (.etaC5H5)", Organometallics, 15(7), pp. 1935-41, (1996)	
	PC-071	ZEMBAYASHI et al., "Nickel-Phosphine Complex-Catalyzed Homo Coupling of Aryl Halides in the Presence of Zinc Powder", Tetrahedron Letters No. 47, pp. 4089-4092 (1977)	
	PC-072	ZHU et al., "The Direct Formation of Functionalized Alkyl(aryl)zinc Halides by Oxidative Addition of Highly Reactive Zinc with Organic Halides and Their Reactions with Acid Chlorides, alpha betaUnsaturated Ketones, and Allylic, Aryl, and Vinyl Halides", J. Org. Chem., vol. 56, pp. 1445-1453 (1991)	

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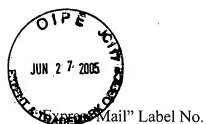
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Applicant(s)

John Dankwardt et al.

Filing Date

July 8, 2003

Title:

Nickel Catalyzed Cross-Coupling Reactions Between Organomagnesium Compounds and Anisole Derivatives

Examiner

Brown, Jennine M.

Group Art Unit

1755

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